

1.0 Introduction

This document defines the Army Training Information System Directorate (ATISD) Standard Engineering Process. Our objective is to provide high quality cost effective products and services. To accomplish this goal, we will develop, implement and sustain a standard process and infrastructure for all technical work or “Product Engineering” in ATISD in accordance with applicable standards and guidelines such as the Carnegie Mellon University Software Engineering Instituted (SEI) Capability Maturity Model (CMM) for improving software Process. The consistent implementation of this process will allow more time to be devoted to the unique technical aspects of a task, resulting in higher quality products developed more productively. A standard process enables ATISD to take the process definition out of project plans, which is where the bulk of redundancy occurs on most projects. This will facilitate project planning and assure consistency across all projects.

2.0 Scope

The ASEPH defines a standard process for all types of ATISD projects. These types include:

Studies and Analysis	Independent Verification and Validation
Software Development	Formal Courseware Development
Software Maintenance	System Engineering and Integration
Process Improvement and Internal Training	

3.0 Applicability

The ASEPH will be used for all ATISD projects. It applies to all technical and administrative staff involved with planning, tracking, reviewing and performing on a project.

As mandated by ATISD policies there are activities that must be performed for all types of ATISD projects. All ATISD projects will adhere to the ASEPH, except for projects that follow an accepted process that has been dictated by ATISC. These projects will be expected to demonstrate compatibility with the ASEPH.

Any Contractor who works for ATISD must follow the process or demonstrate they have an acceptable documented process for accomplishing the task.

4.0 Background

Terms used in this handbook are key to the ATISD standard process. Some terms (such as "tailoring") have special meanings in regard to the ATISD process. This section provides a brief description of key terms readers need to understand. Readers should consult the list of acronyms contained in Appendix A or the glossary of terms in Appendix G as needed.

Every project performs a series of interrelated activities to produce certain products or services desired by the customer. The word "process" refers to the combined set of methods, tools, personnel, etc. which are assembled for a finite length of time to produce some set of specified products or services. The execution of the process produces "artifacts" which include typical deliverables (such as code, data, documents, services, etc.) and non-deliverables (such as plans, schedules, meeting minutes, status reports, audit records, etc.). The information contained in artifacts is described by "standards". Standards specify the elements required to produce the product and manage the work. They may also specify the format of the document, similar to mil-spec Data Item Descriptions (DIDs). Activities use some artifacts to produce other artifacts. Activities are described by "procedures". The activities defined in a procedure are performed by people having specific "roles" such as Engineer and Manager. Roles are assigned in the project's plan. For example, "Joe Smith will be the Project Manager. Mary Jones will be the Chief Engineer." The mapping of activities to roles to individuals ensures that the responsibility for performing necessary activities is clearly defined. (Everyone knows what his/her job is.) An individual may have multiple roles at any one time, especially on a small project.

The process, standards, procedures, and roles assures that the project team uses the "best practices" appropriate to their particular type of project and the rigor at which it will be performed. (The project types and levels of rigor are described in Section 3 of Part 2.) To summarize:

- ?? Artifacts are tangible products generated by the production process.
- ?? Standards describe WHAT is produced.
- ?? Procedures describe HOW it is produced.
- ?? The process describes WHEN the activities are performed. (Their precedence and time sequencing.)
- ?? Roles describe WHO does the work.

The standard process is defined, revised and maintained by the ATISD Software Process Group (SPG) based on guidance and information provided by the ATISD staff, commercial standards, technological advances and industry "best practices". The ASEPH documents the policies, the process, and the procedures and standards that are used to implement it. We will continue to update and refine the process based on "lessons learned".

Artifacts gathered during the life of the project are stored as the "project records". The "project records" may be comprised of several books, data in a file cabinet drawer, poster board diagrams, etc. The records should contain: meeting minutes, design charts, data flows, schematics, data used to calculate schedules and estimates, information from the customer, etc.

5.0 Document Overview

The ASEPH is divided into 3 main sections:

- ?? Part 1 contains introductory material to familiarize the user with basic information about the policies and how and to whom they apply

- ?? Part 2 contains procedures
- ?? Part 3 contains standards

5.1 Numbering Scheme

Every procedure and standard has a unique identification number to permit precise referencing. These include any customized and/or supplemental procedures and standards defined by a project. This section defines the numbering scheme for procedures and standards. This information will enable users to locate procedures and to write any new procedures and standards, which may be needed.

Identification numbers for standards and procedures consist of fields separated by hyphens. The identifier strings begin with P and S for procedure and standard, respectively. The second field gives the type of object. For procedures and standards specific to a particular project, the third field is an alphabetic abbreviation denoting the project (e.g. “TPT” to denote “Tactical Proficiency Trainer”), followed by the unique number in the fourth field. The last field is a single letter denoting the version (A= first revision, etc.).

Here are some examples of valid identification numbers:

S-PM-001	standard, project management, number 001 (part of the standard set)
S-CM-007-020	standard, configuration management, number 007, second revision, (version 2.0, part of the standard set)
S-PE-IFC-006	standard, product engineering for project IFC, number 006 (kept in the Project Notebook)
P-PM-001	procedure, project management, number 001
P-PM-RSS-001-C	procedure, project management for the RSS project, number 001, revision three (kept in the Project Notebook)

Note that the numbers do not necessarily correspond. For example, procedure P-PM-001 may cover Project Planning while procedure P-PM-RSS-001-C may cover Conducting Reviews. If possible, we do recommend that corresponding numbers be used to indicate a derivative relationship. To ensure accurate traceability, however, whenever the standards and procedures are derived from the organizational versions, they will have a field that explicitly references their “parent”. The procedures and standards will be divided into seven categories defined as follows:

<u>Symbol</u>	<u>Categories</u>
PM	Project Management
PE	Product Engineering
CM	Configuration Management
QA	Quality Assurance
TR	Training
PI	Process Improvement

GP

General Purpose

6.0 References and Traceability

Several sources were used as guidance and reference for the standard engineering process, and the procedures and standards that are used to implement it. The US Army Research, Development and Engineering Center's (RDEC) Software Engineering Directorate (SED) process and the SAIC ATG SEPH were used as the starting template.

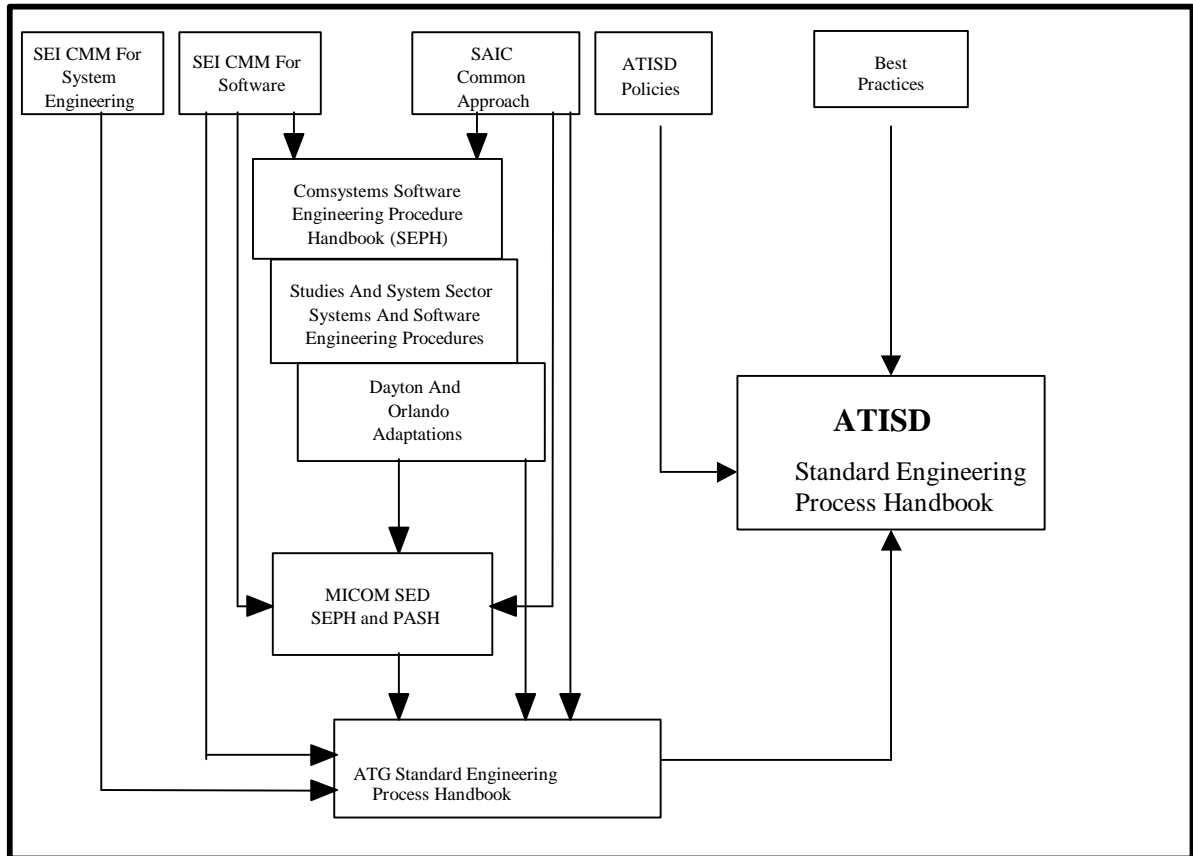


Figure 6-1. Source Documents and Compliance

The process defined in this document adheres to the ATISD engineering policies, the SAIC Common Approach to Software Development and Maintenance (CASDM), as well as the Software Engineering Institute (SEI) Capability Maturity Model (CMM) for software. ATISD also has a goal of adhering to the SEI CMM for System Engineering.